EASTERN RESEARCH GROUP, INC.

MEMORANDUM

TO: Rick Crume, U.S. Environmental Protection Agency (EPA),
Office of Air Quality Planning Standards (OAQPS), (MD-13)

FROM: Susan Radomski, Eastern Research Group (ERG), Morrisville

DATE: August 27, 1998

SUBJECT: Summary of the July 7, 1998 Meeting of the Industrial Combustion Coordinated Rulemaking (ICCR) Incinerator Work Group (IWG)

1.0 INTRODUCTION

- The primary purpose of the meeting was to finalize the draft Regulatory Alternatives Paper (RAP) for presentation to the Coordinating Committee at its July meeting. Other meeting objectives included the completion of work on test recommendations and discussion of the Boiler Work Group (BWG) comments on the RAP and childrens health comments. A complete meeting agenda is included as attachment 1.
- The meeting was held on July 7, 1998 in Pittsburgh, Pennsylvania.
- A complete list of meeting attendees with their affiliations is included as attachment 2.

2.0 SUMMARY OF DISCUSSION AND DECISIONS

The meeting discussion generally followed the agenda. Topics of conversation are summarized in the following sections:

2.1 IWG Announcements and Updates
2.2 Discussion of Potential Improvements to RAP
2.3 Subteam Progress Reports and Test Recommendations
2.4 Where do we go from here?
2.5 Action Items

2.1 IWG Announcements and Updates

- Rick Crume of EPA informed the IWG that the status of the ICCR FACA was under discussion. A decision is expected by the end of July. He offered his thanks to those IWG members who participated in the phone poll about the FACA renewal.

- Rick Crume reported that of the 79 test reports requested from facilities of interest to the IWG, 26 have been received. A data summary of some of the reports will be made available in the next few weeks.

- Rick Crume passed out copies of a letter written by Keith Harley in which Mr. Harley requested that the IWG pay more attention to childrens health issues. Norm Morrow of Exxon Chemical Americas had responded personally prior to the meeting.

2.2 Discussion of Potential Improvements to RAP

Jeff Shumaker of International Paper led a discussion with the IWG on the second draft of the RAP:

- Rick Crume outlined the changes he and Norm Morrow had incorporated into the current version of the RAP. Jeff Shumaker pointed out that all submitted comments on the RAP had been considered, however, it was not possible to discuss all of them with the IWG due to time constraints. IWG members pointed out additional improvements such as the consistent titling for pathological waste incinerators and crematories.

- Dick Van Frank of The National Audubon Society expressed concern over the lack of definition for solid waste, which EPA is expected to provide. Jeff Shumaker responded that the IWG would be most efficient if they work on issues over which they have control. Bob Morris of The Coastal Corporation suggested that the IWG add the current staff version of the definition for solid waste as an example of the basis from the which the IWG is starting. Rick Crume suggested that they avoid including the current definition in the RAP because using it implies agreement with the definition. Scott Warner suggested that Bob Morris and Dick Van Frank write up language, to be included in the RAP, explaining where to find the documents discussing the definition of solid waste.

- The IWG discussed issues of concern such as childrens health issues and BWG comments. They reworded a footnote in the RAP addressing the topic of childrens health to include an example of how this issue may be taken into account. The BWG comments included the issue of the "treated wood boiler" definition, which was removed from the RAP along with corresponding references, due to insufficient discussion of the issue between the Work Groups. Due to time constraints, further comments from the BWG will be evaluated at a later date.

2.3 Subteam Progress Reports and Test Recommendations

- Subteam 1 expressed concern over the request that they develop alternatives to their original number of 14 to 16 emission tests. The subteam was uncomfortable further prioritizing the tests without knowing how many would be funded. Members of Subteam 1 requested time to resolve differences within the subteam regarding the purposes of testing and some of the details of test requests, funding and time constraints. Their draft testing recommendations, dated June 30, 1998, may be found as attachment 3.

- Subteam 2 reported a difficulty in finding dioxin emission data. The subteam scheduled a teleconference to discuss testing plans to obtain the data. They plan to look into the method used to set a limit for wastewater sludge incineration emissions, which has been identified as a dioxin source.

- Subteam 3 had no testing recommendations to report. The subteam plans to leverage their resources with the BWG to complete any necessary tests.

- Subteam 4 posted their testing recommendations for drum reclaimers (attachment 4) and PVC-coated metal parts reclaimers and non-PVC-coated metal parts reclaimers (attachment 5). The subteam does not yet know if a single model plant will suffice for the subcategory, or if further subcategorization will be necessary. They also reported a plan to research and address small business concerns related to their subcategories.

2.4 Where do we go from here?

- Rick Crume challenged the IWG members to think through where the IWG is headed and whether additional work on the RAP is warranted. He referred to the figure from the draft RAP that illustrates the steps leading to the RAP and beyond (attachment 6). Jeff Shumaker noted that there was still considerable work to be done in defining floors and control options, and that this should be the IWG's focus in the near future. The Work Group agreed that completing the RAP should be their immediate priority, and that further work on floors and control options should be incorporated into the RAP as opposed to creating separate documentation.

2.5 Action Items

- Subteam 1 will schedule a teleconference to discuss test recommendations. They will e-mail their decisions to the rest of the IWG for comments.

- Subteam 2 will hold a teleconference to further discuss test recommendations. They will submit recommendations to Rick Crume by the close of business Monday, July 13.

- Subteam 3 will consider the comments made about their testing recommendations and forward any revisions to Rick Crume by Friday, July 10.

3.0 UPCOMING MEETINGS

- August 4: IWG teleconference, 10:00 a.m. EDT

- September 3: IWG meeting, location to be announced.

ICCR INCINERATOR WORK GROUP MEETING
July 7, 1998, Pittsburgh International Airport
Pittsburgh, Pennsylvania

Activities and Decisions

- Rick Crume offered updates on Incinerator Work Group (IWG) issues. He discussed the status of the FACA charter. The EPA decision to continue or end the FACA when the charter ends in September is expected by the end of July. Mr. Crume reported that 26 of the 79 test reports requested from facilities have been received. He also circulated copies of correspondence between Keith Harley of the ICCR Coordinating Committee and Norm Morrow which addressed the need to incorporate childrens health issues in the Regulatory Alternatives Paper (RAP).

- Rick Crume pointed out the most recent changes to the RAP. Work Group members offered changes and revisions.

- The IWG discussed ways to address childrens health issues in the RAP. A footnote dedicated to the topic in the current version was altered to include an example of how this issue may be taken into account.

- The IWG discussed the Boiler Work Group (BWG) comments on the RAP. The first issue raised was the definition of "treated wood boiler," which was removed from the RAP along with corresponding references due to insufficient support and discussion of the issue between the Work Groups. The IWG plans to evaluate the rest of the comments at a later date.[1]

- The IWG agreed to forward the current version of the RAP, with the suggestions made today, to the Coordinating Committee.

- The Subteams discussed their latest test recommendations.
  - Subteam 1 reported differences among members that need to be resolved regarding the purposes of testing and some of the details

[1] Clarification from Rick Crume, EPA Co-Chair, added during review of the above minutes: All of the BWG's comments had been reviewed prior to the July 7 meeting and most of their recommendations had already been incorporated into the version of the RAP that was discussed at that meeting.

of the test requests and some concern over funding and the time constraint.

- Subteam 2 reported their difficulty in finding dioxin emission data. They scheduled a teleconference to discuss testing in order to obtain the data.
- Subteam 3 plans to leverage their resources with the BWG and had no testing recommendations to report.
- Subteam 4 reviewed and answered questions about their posted recommendations.

Upcoming Meetings

- The current Work Group meeting schedule is as follows:

  - July 13: Subteam 2 teleconference, 10:00 a.m. EDT
  - August 4: Incinerator Work Group Teleconference, 10:00 a.m. EDT
  - September 3 and 4: Incinerator Work Group meeting, location to be announced

Action Items

- Subteam 1 will schedule a teleconference to discuss test recommendations. They will e-mail their decisions to the rest of the IWG for comments.
- Subteam 2 will hold a teleconference to further discuss test recommendations. They will submit a decision to Rick by close of business Monday, July 13.
- Subteam 4 will consider the comments made about their testing recommendations and forward any revisions to Rick Crume by Friday, July 10.
- All subteams should forward their latest database to Rick Crume for submittal to the Coordinating Committee.

Attachment 1

Final Agenda
ICCR Incinerator Work Group

AGENDA
INCINERATOR WORK GROUP MEETING
July 7, 1998 9:30 am to 4:00 pm
Conference Room A
Pittsburgh International Airport

MEETING OBJECTIVES

 # Finalize the draft Regulatory Alternatives Paper (RAP) for presentation to the Coordinating Committee at its July meeting.

 # Complete work on test recommendations and any other materials to be presented at the July CC meeting.

 # Discuss BWG and children's health comments and subteam updates.

AGENDA

9:30 am **Call to order and welcome -- *Rick Crume***
Approval of agenda -- *Scott Warner*
Review of meeting objectives -- *Jeff Shumaker*

9:40 am **Announcements and updates -- *Rick Crume***

9:50 am **Closure on "current" version of the RAP-- *Group***

10:15 am **Discussion of potential improvements to "current" RAP -- *Group***

A. Childrens health
B. BWG comments
C. Subteam reports

11:30 am **WORKING LUNCH**

12:30 pm **RAP improvements discussion (continued) -- *Group***

1:30 pm **Finalization of RAP improvements -- *Group***

2:00 pm **BREAK**

2:15 pm **Discussion of test recommendations -- *Group***

3:30 pm **Where do we go from here? -- *Rick Crume***

3:45 pm **Wrap-up**

Scheduling of future meetings/teleconferences -- *Jeff Shumaker*
Other business -- *Group*
Flash minutes -- *ERG*

4:00 pm **Adjourn -- *Rick Crume***

Attachment 2

Meeting Participants

Meeting Participants

Name	Affiliation
Ethan Begg	Missouri Department of Natural Resources
Beth Berglund	Merck & Co, Inc.
Andy Bodnarik	New Hampshire Department of Environmental Resources
Richard Crume	U.S. EPA/OAQPS
Jon Devine	U.S. EPA/OGC
Doug Finan	GlaxoWellcome, Inc.
Mike Fisher	American Plastics Council
Ruth Mahr	Citizens Concerned about Medical Waste Incineration
Dennis Marietta	La-Z-Boy, Inc.
David Marrack	Galveston-Houston Assoc. for Smog Prevention
Bob Morris	The Coastal Corporation
Bill Perdue	Pulaski Furniture Corporation
Susan Radomski	Eastern Research Group, Inc.
Paul Rahill	Industrial Equipment and Engineering Company
Andrew Roth	Regional Air Pollution Control Agency (Ohio)
Kay Rykowski	Harding Lawson Associates
Chris Sarsony	Eastern Research Group
Jeff Shumaker	International Paper
Dick Van Frank	National Audubon Society
Dale Walter	Industrial Equipment and Engineering Company
Scott Warner	Eastern Research Group
Dana Worcester	Association of Container Reconditioners

Attachment 3

Subteam 1 Test Request

DRAFT, 6/30/98

SOURCE WORK GROUP NAME: Incinerator Work Group (IWG)

SOURCES/SUBCATEGORIES TO BE TESTED: Pathological waste and crematory incinerators

PURPOSE & NEED FOR TESTING: There is a need for information showing the effect that varying ratios of non-tissue pathological waste and up to 30% "other" waste have on emission levels of 129 pollutants, particularly dioxins/furans and heavy metals. The "other" material may include hospital, medical, or infectious waste.

SUMMARY OF CURRENTLY AVAILABLE TEST DATA: There are no complete data that represent variations in waste mixtures.

DATA GAPS TESTING WOULD FILL: Characterization of how emissions are effected by varying waste mixtures as a basis for MACT emission limitations.

ALTERNATIVES TO TESTING:

Most of the single-chamber, under 100 lb/hr units operate with tissue as the only waste being burned. The test with 10% non-tissue material was added in case facilities wanted to operate this way. If this is a compliance issue only, then this test case could be eliminated.

Study of existing data for particulate matter and carbon monoxide for single-chamber, under 100 lb/hr units has not shown a clear difference in emissions from the 100 to 500 lb/hr. If it is accepted that emissions of the remaining 129 pollutants are not significantly different, then testing on the single-chamber, under 100 lb/hr units is not necessary. The same limitations established for the larger units could be applied.

In reviewing the information from the September 17, 1997 Dioxin Primer presented to the ICCR, it is noted that crematories and pathological incinerators meet many of the criteria for low dioxin/furan formation. Also, the heavy metals content of the waste input and the amount of waste processed annually do not suggest high heavy metal emission rates. Some suggested alternatives to testing for developing emission limitations for heavy metals and dioxins/furans are:

- # Use the HMIWI limits established for "small, remote" units.
- # Use existing emission data with a factor of 10 for uncertainty.
- # Estimate the amount of metals expected in the input using available information and apply a factor of 10 for uncertainty.

DESCRIPTION OF COMBUSTION UNITS AND MATERIALS TO BE TESTED:
NUMBER OF COMBUSTION UNITS AND TESTS: Three units total. One representative retort design unit in the 100 to 500 lb/hr grouping; one representative multi-chamber design unit in the greater than 500 lb/hr grouping; one representative, single chamber, under 100 lb/hr unit.

There shall be eight tests total. Three tests on each of the two larger units and two tests on the under 100 lb/hr unit.. Each test consists of 3 sampling periods, or runs. See the attached matrix of test conditions.

POLLUTANTS TO BE TESTED: All the 129 pollutants in every testing scenario.

LEVERAGING OF RESOURCES: Subteam 1 members can attempt to identify units to test and help prepare the test plan.

COST: Based on $70,000 a test for all the 129 pollutants, the total cost is $420,000. A cost to test for all 129 pollutants except for dioxins/furans and heavy metals would be approximately $20,000 per test.

Matrix of Test Conditions

Size Grouping	Operating Conditions	One test at each of the following conditions		
		% Tissue	% Bedding / Container	% Other*
Greater than 500 lb/hr	Secondary chamber temp. of 1800ºF	70	20	10
		30	60	10
		30	40	30
100 to 500 lb/hr	Secondary chamber temp. of 1600ºF	90	10	0
		70	20	10
		30	60	10
Less than 100 lb/hr	Standard operating conditions	100	0	0
		90	0	10

***The "other" material will be determined.**

Attachment 4

Subteam 4 Drum Reclaimer Test Request

DRAFT, 6/30/98

SOURCE WORK GROUP NAME: Incinerator Work Group

SOURCES/SUBCATEGORIES TO BE TESTED: Drum Reclaimer Furnaces

Three sources/furnaces will be tested:

1. A furnace that is similar to the model plant
2. A furnace running less than 200 drums per hour and is a small business
3. An average to large size furnace that is less than 10 years of age

PURPOSE & NEED FOR TESTING: The Subteam searched the EPA ICCR Emissions Database, trade group records, EPA technical documents, State agency resources, and State air permits that specify emission limits and could not find data to accurately characterize these units. As a result, Subteam 4 has concluded that there is insufficient emissions data available to accurately characterize these units.

SUMMARY OF CURRENTLY AVAILABLE TEST DATA: The ICR Survey did not identify any HAPs emission data for drum reclamation furnaces. The trade group has found a single reference for some Section 129 pollutants. No data exist to characterize small drum furnaces.

DATA GAPS TESTING WOULD FILL: Subteam 4 has identified the following key emissions data gaps:

1. Insufficient data to characterize most Section 129 pollutants
2. The effect of furnace differences on emissions, including:
   - Size of the unit
   - Age of the unit
3. The effectiveness of possible MACT control devices

ALTERNATIVES TO TESTING: Since insufficient data exists to determine either a numerical emission limit or a percent reduction, the alternative to testing would be to estimate a MACT standard.

DESCRIPTION OF COMBUSTION UNITS AND MATERIALS TO BE TESTED: Typically these units are semi-continuous, natural gas fired tunnel furnaces equipped with an afterburner. Process rates range from 40 to 500 55-gal drums per hour. Container residues may include hazardous materials. The units would operate at or near the maximum rated/permitted capacity and would utilize a thermal oxidizer. Operating conditions would be representative of normal operating conditions.

Priority 1 -- A natural gas fired drum furnace with a thermal oxidizer running approximately 300 drums per hour (Over 10 years of age)

Priority 2 -- A natural gas fired furnace with a thermal oxidizer running less than 200 drums per hour (Any age, small business)

Priority 3 -- A natural gas fired furnace with a thermal oxidizer running 300 or more drums per hour (Less than 10 years of age)

NUMBER OF COMBUSTION UNITS AND TESTS: The Subteam proposes to test three drum reclamation furnaces for all Section 129 pollutants.

POLLUTANTS TO BE TESTED: All Section 129 pollutants.

LEVERAGING OF RESOURCES: The Association of Container Reconditioners would act as a liaison between the Work Group and the test facilities.

COST: The Subteam estimates that the three emissions tests proposed, data analysis and data reporting will cost $300,000 (This is a preliminary estimate)

Attachment 5

Subteam 4 Metal Parts Reclaimer Test Request

DRAFT, 6/30/98

SOURCE WORK GROUP NAME: Incinerator Work Group (IWG)

SOURCES/SUBCATEGORIES TO BE TESTED: Four metal parts reclaimer units (two PVC-coated metal parts reclaimer units and two non-PVC-coated metal parts reclaimer units)

PURPOSE & NEED FOR TESTING: Reviews of the SURVEY database (**surveyv2.mdb**) and the EMISSION TEST database (**iccrinc.mdb**) indicate that additional emissions data are necessary to support a Section 129 ICCR rulemaking development for metal parts reclaimer units. The emission test database has not a single entry for a metal parts reclaimer unit, while the survey database indicates the existence of very limited emissions data, mostly for PM and CO. Clearly additional emissions data are needed in order to establish numerical emission limits for nine pollutants as required by Section 129.

SUMMARY OF CURRENTLY AVAILABLE TEST DATA: The IWG has subcategorized metal parts reclaimer units into three groupings: electrical winding reclaimer units, polyvinyl chloride (PVC)-coated metal parts reclaimer units, and non-PVC-coated metal parts reclaimers units, to facilitate identification of currently available test data. Based on review of **surveyv2.mdb**, currently available emission test data points for the nine Section 129 pollutants are as follows:

carbon monoxide	18	cadmium	1
lead	1	dioxins	2
nitrogen oxides	10	hydrogen chloride	3
particulate matter	21	mercury	1
sulfur dioxide	7		

Most of the non-criteria Section 129 pollutant emission test data listed above are from tests performed on a single electrical winding reclaimer unit. Finally, the IWG possesses incomplete, old (1973) emissions data for hydrogen chloride emissions from one PVC-coated metal parts reclaimer unit. The hydrogen chloride emissions were measured to be 38 pounds per 1000 pounds charged (approximately one 8-hour batch). However, it should be noted that reliable, recent, non-criteria Section 129 pollutant emission data do not exist for PVC-coated and non-PVC-coated metal parts reclaimer units.

DATA GAPS TESTING WOULD FILL: Due to the large amounts of chlorine present in PVC, and published ambient PCDD/PCDF data, the IWG expects that hydrogen chloride and dioxins are emitted from PVC-coated metal parts reclaimer units. For PVC-coated and non-PVC-coated metal parts reclaimer units, no emissions data exist for metals, hydrogen chloride, and dioxins. Testing would allow establishing numerical emission limits for these pollutants as required under Section 129.

ALTERNATIVES TO TESTING: Conceivably a materials balance approach could be employed to estimate hydrogen chloride emissions from PVC-coated metal parts reclaimer units. Natural gas combustion emission factors could be used to estimate emissions of SO2 and

perhaps NOx. However, for the other Section 129 pollutants, especially dioxins, there is no alternative to stack testing. Six samples of cured coatings pyrolyzed in non-PVC-coated metal parts reclaimer units will be submitted under the Boiler Work Group materials testing program. This should provide direction for further stack testing recommendations.

DESCRIPTION OF COMBUSTION UNITS AND MATERIALS TO BE TESTED: Most metal parts reclaimer units are small natural gas-fired batch units equipped with an afterburner. They are often only differentiated on the type of parts they are used to reclaim. Many non-PVC-coated parts reclaimer units burn off cured coatings from paint hooks and racks. Other non-PVC coatings include rubber, nylon, polyethylene. Electrical winding reclaimer units burn off transformer cores or electric motor windings. Transformer dielectric fluid may contain PCBs. Electric motor windings are generally coated with a clear, nonpigmented varnish. A small number (estimated 30 - 50) of units burn off plastisol-coated electroplating racks. Plastisol is a suspension (or is it an emulsion?) of PVC in a phthalate plasticizer. Plastisol serves as a tough, temperature- and chemical-resistant dielectric on the surface of the metal electroplating racks.

NUMBER OF COMBUSTION UNITS AND TESTS: Given the similarity of design and operation of most metal parts reclaimer units, a relatively small number of emission tests are required to allow establishing reasonable Section 129 pollutant emission limits. At a minimum, complete Section 129 pollutant testing is recommended for two PVC-coated metal parts reclaimer units and two non-PVC-coated metal parts reclaimer units. Due to the existence of Section 129 pollutant emission data for an electrical winding reclaimer unit, no additional testing for this type of unit is recommended at this time.

POLLUTANTS TO BE TESTED: The IWG recommends concurrent outlet-only testing for the entire set of Section 129 pollutants - particulate matter, carbon monoxide, sulfur dioxide, nitrogen oxides, lead, hydrogen chloride, dioxins, cadmium, and mercury.

LEVERAGING OF RESOURCES: Local air agency (RAPCA) can provide stack test observers to ensure conformance to U.S. EPA Reference Methods at one PVC-coated metal parts reclaimer unit and two non-PVC-coated metal parts reclaimers.

COST: Outlet-only testing for the nine Section 129 pollutants (per unit) = $65,000. This value is 1/8th of the stack test cost estimate provided by the Boiler Work Group in their posted document **bwgtest.wpd**. A factor of 8 is based on one test condition, rather than four, and outlet only testing, rather than inlet and outlet. Costs may need to be adjusted based on the methods used. Total cost = 4 x $65,000 = $260,000.

Attachment 6

Illustration of the Steps Leading to Rap and Beyond

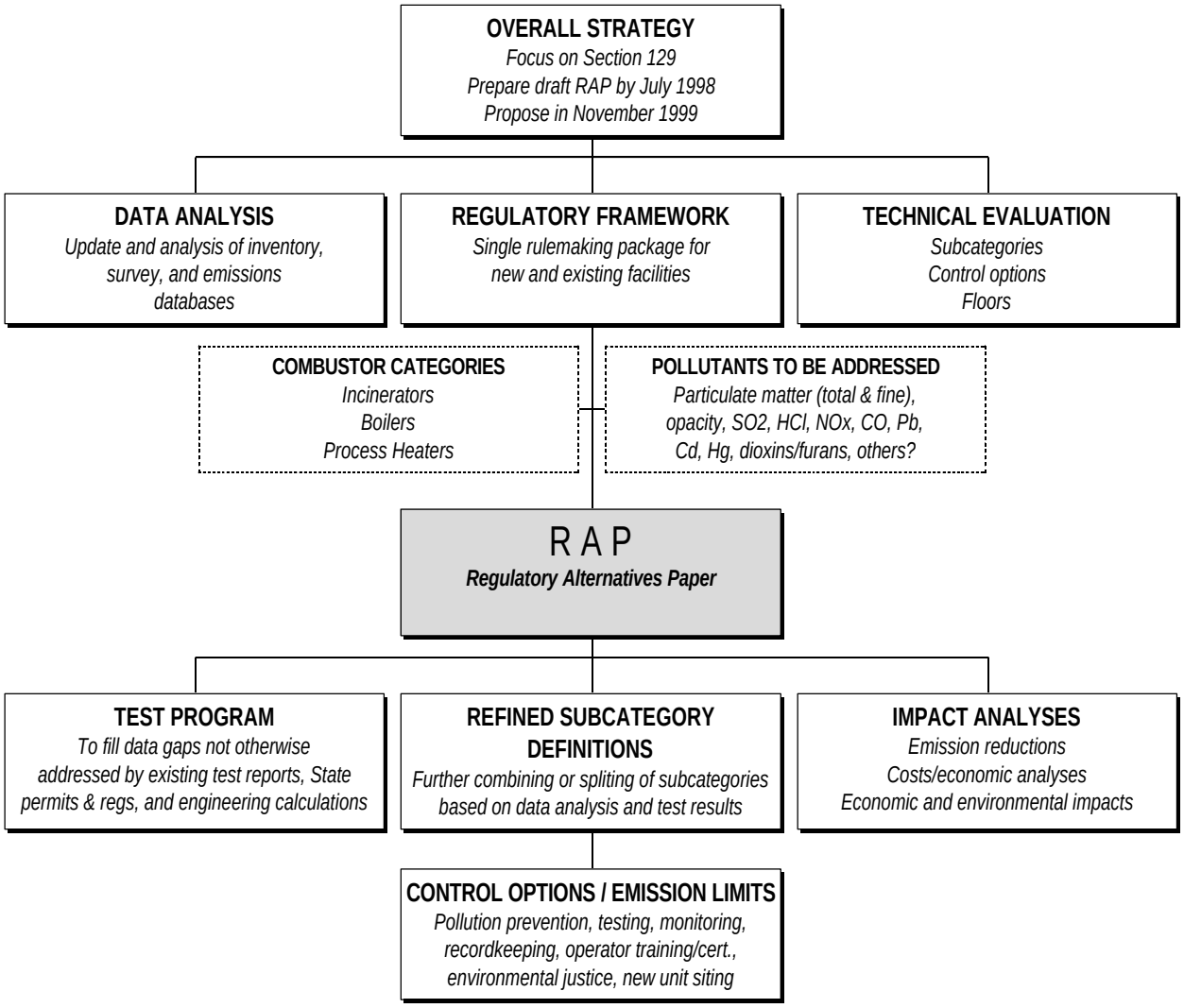

Figure 2. Illustration of steps leading to the RAP and beyond.